

ranged from 0.40 inch at Sublet to 2.56 inches at Louisiana. Four of the 5 stations in Indiana reported more than 5.50 inches, the greatest being 5.94 inches at Knox, while Collegeville, in the Iroquois River Valley, reported only 1.48 inches. In Illinois there were 10 stations that reported 4 inches or over. The greatest amount was 6.64 inches at Peoria, and the least, 0.16 inch, at Wausau. The average monthly amounts and departures for the several States or parts of States of the district were as follows: North Dakota, 3.45 inches, +0.23 inch; Minnesota, 3.81, -0.24; South Dakota, 3.84, -0.34; Wisconsin, 3.58, -0.25; Iowa, 1.97, -2.48; Missouri, 1.40, -2.86; Indiana, 4.68, +0.13; and Illinois, 2.73, -1.06 inches.

The average precipitation for the district, as shown by the records of 303 stations, was 2.99 inches, which is 1.19 inches below the normal. The greatest amount, 8.68 inches, occurred at Stillwater, Minn., and the least, 0.06 inch, at Keosauqua, Iowa. The greatest amount in any 24 consecutive hours, 4.74 inches, occurred at Peoria, Ill., on the 24th. Redwood Falls, Minn., was the only station in the district that reported snow, a trace. Measurable precipitation occurred on an average of 8 days.

SUNSHINE AND CLOUDINESS.

The average number of clear days was 16; partly cloudy, 9; cloudy, 5. The duration of sunshine was much above the average for June.

WIND.

Southeast winds prevailed. The highest velocity reported was 50 miles per hour from the southeast at Minneapolis, Minn., on the 24th, and 50 miles per hour from the northwest at St. Paul, Minn., on the 3d.

RIVERS.

The principal rivers in the upper Mississippi Valley remained at a moderately high stage during the first half of the month, after which they steadily fell, and at the close of the month they were only slightly higher than at the close of June, 1910. Navigation between St. Paul and St. Louis was not interrupted during the month. The stage of the Wisconsin River at Grand Rapids, Wis., ranged from 4.6 feet on the 8th to 0.5 foot on the 28th. At Portage, Wis., it ranged from 7.3 feet on the 10th to 2.8 feet on the 30th, and at Muscoda, Wis., it ranged from 4.8 feet on the 1st to 1.5 feet on the 30th. The stage of the Mississippi River at Prairie du Chien, Wis., ranged from 6.5 feet on the 1st to 2 feet on the 30th; and at Dubuque from 7.1 feet on the 2d to 2.7 feet on the 30th.

MISCELLANEOUS.

Mr. Samuel Ray, cooperative observer, Oregon, Ogle County, Ill., reports: "A tornado passed through the county in the vicinity of Oregon on June 10, 1911, between 3.30 and 4 p. m. The path of greatest destruction

ranged from 100 feet to one-fourth of a mile in width. A funnel-shaped cloud was seen by outside observers. One person was killed and five were injured. The property loss was about \$10,000 in buildings and orchards."

Mr. Charles H. Dwelle, cooperative observer, Northwood, Worth County, Iowa, reports: "This vicinity was visited by a storm of considerable severity at about 2 a. m., Friday, June 2. The storm traveled from northeast to southwest, and approached the nature of a tornado."

The following is an extract from the Ames Intelligencer, Ames, Iowa, June 29, 1911, relative to a severe wind and rain storm that passed over Ames on the night of Sunday, June 25: "The storm of Sunday night was one of the worst ever remembered by Ames residents, the part coming between midnight and 1 a. m. being of a 'cyclonic' nature. Many say they could distinctly distinguish the funnel-shaped cloud, and, while it did not come low enough to do serious damage, yet the corn north of town that is blown down is reported to be twisted. Considerable damage was done to buildings, windmills, and crops."

Mr. Frank Williams was killed by lightning at 1443 Main Street, Des Moines, Iowa, at 4.45 p. m. Sunday, June 25.

The High School building at Mason City, Iowa, was struck by lightning and burned on the morning of June 16, 1911, causing a loss of \$75,000. The barn on the Treno Evers farm, 1 mile west of Allison, Iowa, was struck by lightning and burned at 4 a. m. on June 26. Three head of cattle were killed and 2 horses and 25 tons of hay burned.

DRAINAGE AND ENGINEERING NOTES.

The following, relative to drainage work being done in Worth County, Iowa, appeared in the Times-Republican, Marshalltown, Iowa, June 23, 1911:

NORTHWOOD, IOWA, June 22, 1911.—The preliminary work on the survey of a proposed drainage district in Worth County is nearly completed. This district is one of the largest enterprises of its kind in Iowa, embracing all the lands in Worth County of which Deer Creek is the natural outlet, being practically all of Deer Creek and Barton Townships and about 8 square miles on the east line of Grove and 3½ sections of the northeast corner of Kensett Townships. Of this great area of 45,000 acres, at least 15,000 acres need drainage. Surveyor Forbes and his assistants have surveyed and platted every swale of wet land in that territory, and are specifying lines of ditch and tile in every such swale so as to give an outlet for the proper drainage of every farm in the district. This required the running of 400 miles of boundary lines and over 100 miles of ditch lines. Surveyor Forbes expects to have the work finished before July, but after that it will necessarily take some little time to prepare his report.

Work is progressing rapidly on the new concrete dam being erected across the Des Moines River at Humboldt, Iowa. It is the intention to increase the present working force, now numbering over 50 men, and rush the work to completion by the 1st of September, when the construction of the new power house will begin. The low stage of water in the river materially aids the rapid progress of the work.